

CLAIMS

What is claimed is:

1. A method of writing data on a recording medium, in response to a write request issued from an external device, comprising the steps of:
 - receiving a write command;
 - storing write data corresponding to said write command in a buffer memory;
 - and
 - checking a first condition that determines whether or not a free space of said buffer memory is larger than a predetermined reference value, which is greater than a memory space equivalent to a unit of said write data, wherein a command complete signal is returned to said external device, in response to said write command if said first condition is satisfied.
2. The method of writing data on a recording medium according to claim 1, wherein said method further includes the steps of:
 - issuing a write command to write data stored in said buffer memory onto said recording medium; and
 - returning to said issuing step if said first condition is not satisfied.
3. The method of writing data according to claim 1, wherein said method further includes the steps of:

checking a second condition that compares a logical block address of said preceding write command with a logical block address of said write command to ascertain whether or not a position of said logical block address of said write command overlaps a position of said logical block address of preceding write command; and

returning a command complete signal to said external device in response to said write command if either said first condition or said second condition is satisfied.

4. The method of writing data according to claim 3, wherein said method further includes the step of:

issuing a write command to write data stored in said buffer memory onto said recording medium.

5. The method of writing data according to claim 4, wherein said step of issuing a write command further comprises the step of:

writing both write data corresponding to said preceding write command and write data corresponding to said write command in adjacent sectors of said recording medium if said second condition is satisfied.

1 6. A disk drive unit, comprising:

2 a recording medium with capability for random access;

3 a command memory for storing a write command received from an external
4 device until said write command is executed;

5 a buffer memory for storing write data corresponding to said write command;

6 a write specification control for controlling the writing of said data on said
7 recording medium; and

8 a first logic circuit for checking a first condition, wherein said first condition
9 determines whether or not a free space of said buffer memory is larger than a
10 predetermined reference value that is greater than a memory space equivalent to a unit
11 of said write data, wherein a command complete signal is returned to said external
12 device in response to said write command if said first logic circuit determines said
13 first condition is satisfied.

1 7. The disk drive unit according to claim 6, further comprising:

2 a delay circuit for suspending said command complete signal until said first
3 logic circuit determines that said free space of said buffer memory is less than said
4 predetermined reference value.

1 8. The disk drive unit according to claim 6, further including:

2 a second logic circuit utilized for checking a second condition, wherein said
3 second condition determines a relationship between a position of a logical block

4 address of said write command stored in said command memory and a position of a
5 logical block address of a new write command.

1 9. The disk drive unit according to claim 7, wherein said relationship may be (1)
2 said position of said logical block address of said write command stored in said
3 command memory and said position of said logical block address of said new write
4 command overlap (2) said position of said logical block address of said write
5 command stored in said command memory and said position of said logical block
6 address of said new write command are separated by at most said predetermined
7 distance or (3) said position of said logical block address of said write command
8 stored in said command memory and said position of said logical block address of
9 said new write command are separated by more than said predetermined distance.

10. The disk drive unit according to claim 8, where in said command complete
11 signal is returned to said external device in response to said new write command if
12 said first logic circuit determines that said first condition is satisfied or said second
13 logic circuit determines that said second condition is satisfied.

14 11. The disk drive unit according to claim 8, wherein said command complete
15 signal is suspended until said first condition and said second condition are satisfied.

16 12. The disk drive unit according to claim 11, wherein said write specification
17 control specifies writing of data corresponding to a plurality of write commands on
18 said recording medium if said second condition is satisfied.